

ROOT CANALS:

Like many dental procedures, the best root canal is the one that was prevented and some controversy still exists about the “holistic” effects of root canal therapy. Often, a root canal is the most sensible treatment option. Teeth are complex bone-like structures with a number of interrelated components; they have a dual path for maintaining “nourishment”. Blood supply from the protected tooth “pulp” within, enters by way the tooth “apex” (root tip); additionally, smaller blood vessels nourish the tooth from without by way of the “periodontal ligament” (see: Tooth Anatomy diagrams, page 25).

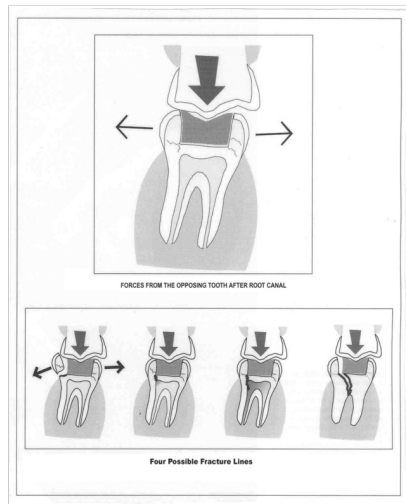
When bacteria penetrate deep enough, the pulp’s vessels and nerves may become involved and pain begins. Secluded within the confines of the tooth, the pulp tissues become infected, often resulting in increased gaseous internal pressure and spreading infection out to the root tip’s external tissues. The infection requires treatment. At this time, the tooth becomes like a castle overrun by bacterial invaders. The entire pulp with its infected content must be removed and the remaining void inside this tooth-castle must be sealed off from further bacterial use. As we have noted, untreated dental infections have serious whole-body consequences.

The inner pulp removal, or endodontic treatment, is accomplished by “instrumenting” (cleaning with tiny files) the internal pulp “chamber” and its internal walls thoroughly, before sealing it off from further bacterial attack. Since this is treatment necessitated by an internal bacterial infection, it has the potential for complications and pain. Modern-day, busy and volume-oriented offices often tend to be time-pressured. It is wise, when initially undergoing complex procedures such as root canals, to arrive for your appointment early and request that the local anesthesia be administered five to ten minutes prior to actual initial treatment in order to better numb the involved tooth. This is especially true if the tooth is severely infected, already in the presence of even slight swelling, or in the lower jaw (local anesthesia diffuses more slowly through the lower jaw’s more dense bone).

A “rubber-dam” or flexible tissue-shaped sheet is most often recommended to isolate the tooth and better facilitate treatment. In recent years, third generation apex locators, digital radiography, nickel titanium rotary instruments, thermally assisted filling systems, improved cements, and other sealing methods, have even popularized a successful one-visit root canal. Nevertheless, the root canal process, though straightforward,

can involve the use of more conventional, stainless-steel files and often take several visits, especially if the tooth has more than one root or if it was extremely infected. The “cleaned” pulp chamber is then filled with an inert rubber-based material (gutta-percha).¹ Success is dependant on adequate removal and management of the bacterial infection. Despite some holistic arguments to the contrary, after a root canal has been properly completed, while slightly more brittle, the tooth can yet provide many years of generally trouble-free service.*

Once pain-free, many patients disregard the next treatment step: the final procedure of filling or sealing the root canal’s upper-most opening (see diagram, on this page). If this structurally important sealing procedure is not done, the tooth will often become reinfected and may eventually become unrestorable and require an extraction. In spite of having previously completed a root canal, some teeth, but not all teeth, will also require some further structural stability, using a carbon-fiber or metal post-and-core treatment (see next section: Post-&-Cores.)



Originally, it was always suggested that *all* teeth needed to be crowned after root canal treatment. Given a current tendency toward larger "" (making a bigger hole through which to remove the pulp), this philosophy may now be more justifiable, for structural stability, than in the past. When the amount of remaining tooth structure, after decay removal and -opening has sufficient bulk, and is structurally sound (not “undermined”) then, a subsequent crown can often be reasobably postponed in the short-term and still be avoided in the long term. When this is possible, further alteration of the natural tooth and the substantial cost of a crown or onlay restoration may be unnecessary. Thus, after root canal completion, your dentist should carefully review your individual tooth’s circumstance, explaining any of these potential treatment or non-treatment options.

* Dental Abstracts 10-11 2003: Success rate average is 72% in cases treated by general dentists and 87% in cases treated by endodontitists.

POST-&-CORES:

Placing some form of permanent restoration over a completed root canal is essential for treatment success. Depending on the amount and condition of the remaining tooth-crown or visible tooth area, anchoring such a restoration to the remaining tooth roots may be also be necessary prior to any permanent “crown build-up” filling or final crown. Post material, shape and placement technique has been a source of much study, experimentation and controversy. Translucent, bonded, carbon-fiber-based posts have now replaced cemented, cast-alloy and metal-pre-fabricated posts that were considered state-of-the-art a decade ago. The advantages and disadvantages of various types of posts are complex; more research and the development of new materials will continue to improve post-and-cores and their placement techniques. In the event of your needing such treatment, ask your dentist his personal rational for his particular post-and-core choice.

EXTRACTIONS:

Philosophically, the best extraction is the one that is avoided; extractions are often preventable. Simply removing a tooth because of extreme pain may not be in a patient’s long-term best interest. Nevertheless, under a variety of circumstances and sometimes without much prior pain, certain teeth may become unavoidable candidates for extraction. Causes for a tooth requiring extraction and becoming harmful to your general health include being “unrestorable” (too extensive a decay-breakdown to fix); having a root “fracture” (root damage well below the tooth’s underlying bone support), or having very severe and unresponsive periodontal disease.

Like with root canals, if this unfortunate circumstance does arise, it is a good idea to arrive for the extraction appointment early and to ask if you can receive local anesthesia five to ten minutes before beginning the procedure. Again, this will allow for the anesthetic numbness to take its more complete effect and go along way towards minimizing any potential pain during the actual extraction.

Another aspect of the extraction procedure occurs “postoperatively” (after treatment). Some infected teeth come out relatively easily, yet the term “simple extraction” may now be somewhat antiquated.¹ Some discomfort, pain and swelling following a difficult extraction may be inevitable and some subsequent localized bone loss unavoidable. To minimize resulting bone defect, your dentist or oral surgeon should do their